shall be forwarded to the office of inspection serving the area in which the processed products from which the samples were drawn is located. Such samples shall be shipped in a manner to avoid any material change in the quality or condition of the sample of the processed product. Containers shall be identified and properly sealed with tape. A facsimile of the ''Officially Sampled'' stamp shall be placed over the taped container. All transportation charges in connection with such shipments of samples shall be at the expense of the applicant.

[51 FR 20439, June 5, 1986]

§52.38 Sampling plans and procedures for determining lot compliance.

(a) Except as otherwise provided for in this section in connection with in-plant inspection and unless otherwise approved by the Administrator, samples shall be selected from each lot in the exact number of sample units indicated for the lot size in the applicable sampling plans. The lot size is to correspond to a sample size with a maximum of 29 sample units: Provided, that at the discretion of the inspection service, the number of sample units selected may be increased to the exact number of sample units indicated for any one of the larger sample sizes provided for in the appropriate plans. The samples size may be increased beyond 29 sample units in accordance with the following sampling plan:

Sample Size	38	48	60
Acceptance Number	5	6	7

(b) Under the sampling plans with respect to any specified requirement:

(1) If the number of deviants (as defined in connection with the specific requirement) in the sample does not exceed the acceptance number prescribed for the sample size, the lot meets the requirement;

(2) If the number of deviants (as defined in connection with the specific requirement) in the sample exceeds the acceptance number prescribed for the sample size, the lot fails the requirement.

(c) If in the conduct of on-line in-plant inspection of a product covered by a grade standard which does not contain sampling plans, the sample is examined before the lot size is known and the number of sample units exceeds the prescribed sample size for such lot, but does not equal any of the prescribed larger sample sizes, the lot may be deemed to meet or fail a specific requirement in accordance with the following procedure:

(1) If the number of deviants (as defined in connection with the specific requirement) in the nonprescribed sample does not exceed the acceptance number of the next smaller sample size, the lot meets the requirement;

(2) If the number of deviants (as defined in connection with the specific requirement) in the nonprescribed sample equals the acceptance number prescribed for the next larger sample size, additional sample units shall be selected to increase the sample to the next larger prescribed sample size;

(3) If the number of deviants (as defined in connection with the specific requirement) in the nonprescribed sample exceeds the acceptance number prescribed for the next larger sample size, the lot fails the requirement.

(d) In the conduct of on-line in-plant inspection, sampling may be performed on a time interval basis. The sampling frequency shall be specified in an applicable grade standard or other procedural instruction approved by the Administrator.

(e) In the event that the lot compliance determination provisions of a standard or specification are based on the number of specified deviations instead of deviants the procedures set forth in this section may be applied by substituting the word ''deviation'' for the word ''deviant'' wherever it appears.

(f) Sampling plans referred to in this section are those contained in Tables I, II, III, IV, and V and (g)(1) and (g)(2) of this section which follow or any other plans which are applicable. For processed products not included in these tables, the minimum sample size shall be the exact number of sample units prescribed in the table, container group, and lot size that, as determined by the inspector, most closely resembles the product, type, container, size and amount of product to be sampled. The maximum sample size in tables I, II, III, IV, V, (g)(1), (g)(2) and processed

products not included in these tables is 29 sample units.

(g)(1) *Sampling plan for dried figs.* For each 10,000 pounds (or fraction of 10,000 pounds) of product—6 sample units of approximately 35 figs each accumulated into 1 composite (at least 200 figs). Each composite will be examined separately, and all must meet the requirement for the U.S. Grade.

(2) *Sampling plan for dried fruits other than dates and figs.* For each 15,000 pounds (or fraction of 15,000 pounds) of product—sample units of approximately 16 ounces each accumulated into 1 composite (at least 100 ounces) Each composite will be examined separately and all must meet the requirements for the U.S. Grade.

TABLE I—CANNED OR SIMILARLY PROCESSED FRUITS, VEGETABLES, AND PRODUCTS CONTAINING UNITS OF SUCH SIZE AND CHARACTER AS TO BE READILY SEPARABLE

Container size group	Lot size (number of containers) [1]				
Group 1: Any type container of a volume not exceeding that of a No. 303 size can.	3,000 or less	3,001 to 12,000	12,001 to 39,000	39,001 to 84,000	84,001 to 145,000
Group 2: Any type of container of a volume exceeding that of a No. 303 size can but not exceeding that of a No. 3 cylinder size can.	1,500 or less	1,501 to 6,000	6,001 to 19,500	19,501 to 42,000	42,001 to 72,500
Group 3: Any type of container of a volume exceeding that of a No. 3 cylinder size can, but not exceeding that of a No. 12 size can.	750 or less	751 to 3,000	3,001 to 9,750	9,751 to 21,000	21,001 to 36,250
Group 4: Any type of container of a volume exceeding that of a No. 12 size can.	Convert to equivalent number of 6-lb. net weight containers and use group 3				
Lot inspection sample size (no. of sample units) [2]	3	6	13	21	29
Acceptance number	0	1	2	3	4
On-line in-plant inspection sample size (no. of sample units) [2]	3	6	6	13	21
Acceptance number	0	1	1	2	3

[1] Under on-line in-plant inspection, a 5% overrun in number of containers may be permitted by the inspector before going to the next larger sample size.

[2] When a standard sample size is not specified in the U.S. grade standards, the sample units for the various container size groups are as follows: Groups 1, 2, and 3——1 container and its entire contents. Group 4 that approximately 2 pounds of product. When determined by the inspector that a 2-pound sample unit is inadequate, a larger sample unit may be substituted.

TABLE II—FROZEN OR SIMILARLY PROCESSED FRUITS, VEGETABLES, AND PRODUCTS CONTAINING UNITS OF SUCH SIZE AND CHARACTER AS TO BE READILY SEPARABLE

Container size group	Lot size (number of containers) [1]				
Group 1: Any type of container of 1 lb. or less	2,400 or less	2,401 to 9,600	9,601 to 31,200	31,201 to 67,200	67,201 to 116,000
Group 2: Any type of container over 1 lb. but not over 2-½ lbs. net weight.	1,200 or less	1,201 to 4,800	4,801 to 15,600	15,601 to 33,600	33,601 to 58,000
Group 3: Any type of container over 2-½ lbs.	Convert to equivalent number of 2-½ lb. containers and use group 2				
Lot inspection sample size (no. of sample units) [2]	3	6	13	21	29
Acceptance number	0	1	2	3	4
On-line in-plant inspection sample size (no. of sample units) [2]	3	6	6	13	21
Acceptance number	0	1	1	2	3

[1] Under on-line in-plant inspection, a 5% overrun in number of containers may be permitted by the inspector before going to the next larger sample size.

[2] When a standard sample unit size is not specified in the U.S. grade standards, the sample units for the various container size groups are as follows: Groups 1 and 2——1 container and its entire contents. Group 3 containers up to 10 lbs.——approximately 3 pounds of product. When determined by the inspector that a 3-pound sample unit is inadequate, a larger sample unit or 1 or more containers and their entire contents may be substituted for 1 or more sample units of 3 lbs.

TABLE III—CANNED, FROZEN, OR OTHERWISE PROCESSED FRUITS, VEGETABLES, RELATED PRODUCTS OF A COMMINUTED, FLUID OR HOMOGENEOUS STATE

Container size group	Lot size (number of containers) [1]				
Group 1: Any type of container of 1 lb. or less	4,500 or less	4,501 to 18,000	18,001 to 56,000	58,501 to 126,000	126,001 to 217,000
Group 2: Any type of container exceeding 1 lb. but not exceeding 60 ounces..	3,000 or less	3,001 to 12,000	12,001 to 39,000	39,001 to 84,000	84,001 to 145,000
Group 3: Any type of container exceeding 60 ounces but not exceeding 10 lbs..	1,500 or less	1,501 to 6,000	6,001 to 19,500	19,501 to 42,000	42,001 to 72,500
Group 4: Any type of container of a volume exceeding 10 lbs.	Convert to equivalent number of 6-lb. containers and use group 3				
Lot inspection sample size (no. of sample units) [2]	3	6	13	21	29
Acceptance number	0	1	2	3	4
On-line in-plant inspection sample size (no. of sample units) [2]	3	6	6	13	21
Acceptance number	0	1	1	2	3

[1] Under on-line in-plant inspection, a 5% overrun in number of containers may be permitted by the inspector before going to the next larger sample size.

[2] When a standard sample size is not specified in the U.S. grade standards, the sample units for the various container size groups are as follows: Groups 1, 2, and 3——1 container and its entire contents. A smaller sample unit may be substituted in Group 3 at the inspector's discretion. Group 4——approximately 16 ounces of product. When determined by the inspector that a 16 ounce sample unit is inadequate, a larger sample unit may be substituted.

TABLE IV—DEHYDRATED (LOW-MOISTURE) FRUITS, AND VEGETABLES

Container size group	Lot size (number of containers) [1]				
Group 1: Any type of container of 1 lb. or less	1,800 or less	1,801 to 7,200	7,201 to 23,400	23,401 to 50,400	50,401 to 87,000
Group 2: Any type of container over 1 lb. but not over 6 lbs. net weight.	600 or less	601 to 2,400	2,401 to 7,800	7,801 to 16,800	16,801 to 29,000
Group 3: Any type of container over 6 lbs.	Convert to equivalent number of 5 lb. containers and use group 2				
Lot inspection sample size (no. of sample units) [2]	3	6	13	21	29
Acceptance number	0	1	2	3	4
On-line in-plant inspection sample size (no. of sample units) [2]	3	6	6	13	21
Acceptance number	0	1	1	2	3

[1] Under on-line in-plant inspection, a 5% overrun in number of containers may be permitted by the inspector before going to the next larger sample size.

[2] When a standard sample unit size is not specified in the U.S. grade standards, the sample units for the various container size groups are as follows: Group 1——1 container and its entire contents. Groups 2 and 3——1 container and its entire contents or a smaller sample unit when determined by the inspector to be adequate.

TABLE V—DATES

Container size group	Lot size (number of containers) [1]				
Group 1: Any type of container of 1 lb. or less net weight	2,400 or less	2,401 to 9,600	9,601 to 31,200	31,201 to 67,000	67,201 to 116,000
Group 2: Any type of container over 1 lb. but not over 5 lbs. net weight.	800 or less	801 to 3,200	3,201 to 10,400	10,401 to 22,400	22,401 to 33,667
Group 3: Any type of container over 5 lbs.	Convert to equivalent number of 5 lb. containers and use group 2				
Lot inspection sample size (no. of sample units) [2]	3	6	13	21	29
Acceptance number	0	1	2	3	4
On-line in-plant inspection sample size (no. of sample units) [2]	3	6	6	13	21
Acceptance number	0	1	1	2	3

[1] Under on-line in-plant inspection, a 5% overrun in number of containers may be permitted by the inspector before going to the next larger sample size.

[2] Samples consist of 25 ounce sample units, each of which may be a composite of product from a sufficient number of individual containers from 1 case to make up the weight. When previous inspection results from a particular source so indicate, 1 composite sample of 25 ounces of product may be formed from the 3 sample units in the smallest sample size, and 2 composite samples of 25 ounces each may be formed from the 6 sample units in the next to smallest sample size. Sample units in larger sample sizes may not be further composited.

[38 FR 25166, Sept. 12, 1973; 38 FR 26903, Sept. 27, 1973. Redesignated at 42 FR 32514, June 27, 1977 and at 46 FR 63203, Dec. 31, 1981, and amended at 51 FR 20439, June 5, 1986]

§ 52.38a Definitions of terms applicable to statistical sampling.

(a) Terms applicable to both on-line inspection and lot inspection.

(1) *Acceptable Quality Level (AQL).* The maximum percent of defective units of product or the maximum number of defects per hundred units of product which are acceptable as a process average. At the AQL's contained in the statistical sampling plans of this subpart, production has a probability of acceptance (''Pa'') of approximately 95 percent.

(2) *Acceptance sampling.* Sampling inspection in which decisions are made to accept or reject product.

(3) *Attributes.* A method of measurement whereby units of product are examined for the presence or absence of specified characteristics in each unit in the sample.

(4) *Defect.* Any nonconformance of a unit of product from specified requirements of a single quality characteristic. Defects are classed as ''minor,'' ''major,'' ''severe'' or ''critical'' depending upon the severity and undesirabil- ity of the defect.

(5) *Defective.* A unit of product that has one or more defects.

(6) *Inspection by attributes.* Inspection whereby a unit of product is classified as defective or nondefective or the number or defects in the unit of product is counted.

(7) *Standard sample unit size.* A specified amount of product to be used for inspection.

(b) Terms applicable to on-line inspection only.

(1) *Basic inspection period.* A specified period of consecutive production designated for on-line inspection.

(2) *Cumulative Sum Sampling (CuSum) Plan.* An on-line sampling plan that accumulates the number of defects (or defectives), which exceed the sample unit tolerance (''T''), in a series of consecutive samples. Terms specific to the CuSum sampling plan are:

(i) *Acceptance limit (''L'').* The maximum accumulation of defects (or defectives) allowed to exceed the sample unit tolerance (''T'') in any sample unit or consecutive group of sample units.

(ii) *CuSum value.* The accumulated number of defects (or defectives) that exceed the sample unit tolerance (''T'').

(iii) *Sample unit tolerance (''T'').* The allowable number of defects (or defectives) in any sample unit.

(iv) *Starting value (''S'').* The initial CuSum value used to begin a CuSum sampling plan.

(3) *On-line sampling inspection.* The random selection and subsequent inspection of sample units from a production line.

(4) *Probability of acceptance (''Pa'').* The probability that a portion of production, with a given level of quality, will be accepted. In on-line sampling inspection, the probability of acceptance of any portion of production depends on the sample results obtained from the preceding portions. The probability of acceptance values associated with these procedures are the values which would be expected if a large number of sample units are to be inspected. For the CuSum plans referenced in these procedures, the probability of acceptance at the Acceptable Quality Level (AQL) is approximately 95 percent. The starting value (''S'') associated with each CuSum plan helps to make the probability of acceptance of the first portions of production of a basic inspection period as close as possible to 95 percent.

(c) Terms applicable to lot inspection only.

(1) *Acceptance number.* The largest number of defects (or defectives) in the sample that will permit acceptance of the inspection lot.

(2) *Inspection lot.* Any number of containers of the same size and type which contain a processed product of the same type and style, manufactured or